

IN THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application:

1. (Currently amended) An isolated mutant human serum albumin substantially comprising the amino acid sequence:

DAHKSEVAHRFKDLGEENFKALVLIAFAQX₅LQQCPFEDHV
KLVNEVTEFAKTCVADESAENCDKSLX₁TLFGDKLCTVATL
RETYGEMADCCAKQEPERX₂X₈CFX₆QHKDDNPNLPRLVRPE
VDVMCTAFHDNEETFLKKYLYEIARRX₉PYFYAPELLFFAKR
YKAAFTECCQAADKAACLLPKLDELDEGKASSAKQRLKC
ASLQKFGERAFAKAWAVARLSQRFPKAEFAEVSKLVTDLT
K VX₁₀TECCX₃X₇X₄LLECADDRADLAKYICENQDSISSKLKEC
CEKPLLEKSX₁₁CIAEVENDEMPADLPSLAADFVESKDVCKN
YAEAKDVFLGMFLYEYARRHPDYSVVLRLAKTYETTL
KCCAAADPHECYAKVFDEFKPLVEEPQNLIKQNCLEFEQLG
EYKFQNALLVRYTKKVPQVSTPTLVEVSRNLGKVGSKCCK
HPEAKRMPCAEDYLSVVLNQLCVLHEKTPVSDRVTKCCTES
LVNRRPCFSALEVDETYVPKEFNAETFTFHADICTLSEKERQ
IKKQTALVELVKHKPKATKEQLKAVMDDFAAFVEKCKKAD
DKETCFAEEGKKLVAASQAALGL (SEQ ID NO.:1)

wherein X₁, is other than H; X₂ is other than N, X₃ is other than H, X₄ is other than D; X₅ is other than Y; X₆ is other than L; X₇ is other than G, X₈ is other than E, X₉ is other than H, X₁₀ is other than H, and X₁₁ is other than H, such that said mutant displays an altered metal binding affinity ~~and/or or other physiological characteristics~~ one or more physiological characteristics with respect to native human serum albumin.

2. (Currently amended) The mutant according to claim 1 wherein said ~~other physiological characteristic(s)~~ one or more physiological characteristics are a change in cell adhesion to a substrate, percentage viability of cell, ~~and/or or~~ cell growth of cells in culture.

3. (Currently amended) An isolated mutant mammalian serum albumin substantially comprising one of the sequences as shown in Table 1 wherein at least one of the residues ~~identified by grey shading denoted by X_n~~ is mutated such that said mutant serum albumin displays an altered metal binding affinity or ~~other physiological characteristic(s)~~ one

or more physiological characteristics with respect to the native sequence from which the mutant is derived.

4. (Previously presented) An isolated mutant serum albumin according to claims 1 or 3 which is at least 90% identical with the native sequence from which the mutant is derived.

5. (Previously presented) The mutant serum albumin according to claims 1 or 3 which is substantially similar in terms of general overall folding with respect to the native serum albumin from which it is derived.

6. (Currently amended) The mutant serum albumin according to claims 1 or 3 wherein the altered metal binding affinity is a decrease or increase in metal binding affinity[.,].

7. (Previously presented) The mutant according to claims 1 or 3 wherein the metal is zinc.

8. (Previously presented) The mutant according to claims 1 or 3 comprising at least one of the following mutations:

X₁ => A, F, G, I, K, L, N, P, Q, R, S, T, V, W, Y, C, D, E

X₂ => A, F, G, I, K, L, P, Q, R, S, T, V, W, Y, C, D, E, H

X₃ => A, F, G, I, K, L, N, P, Q, R, S, T, V, W, Y, C, D, E

X₄ => A, F, G, I, K, L, N, P, Q, R, S, T, V, W, Y, C, E, H

X₅ => C, D, E, H

X₆ => C, D, E, H

X₇ => C, D, E, H

X₈ => A, C, F, G, H, I, K, L, N, P, Q, R, S, T, V, W, Y

X₉ => A, D, E, F, G, I, K, L, N, P, Q, R, S, T, V, W, Y

X₁₀ => A, D, E, F, G, I, K, L, N, P, Q, R, S, T, V, W, Y

X₁₁ => A, D, E, F, G, I, K, L, N, P, Q, R, S, T, V, W, Y

9. (Previously presented) The mutant according to claims 1 or 3 comprising at least one mutation at X₁, X₂, X₃ or X₄.

10. (Previously presented) A mutant human serum albumin comprising the mutation Asn 99His, Asn99Asp or His67Ala.

11. (Currently amended) A nucleic acid sequence capable of encoding a mutant serum albumin according to claims 1 ~~or 3~~ or 10.

12. (Previously presented) An expression cassette comprising a promoter operably linked to a nucleic acid sequence according to claim 11.

13. (Previously presented) A pharmaceutical composition comprising a mutant serum albumin, a nucleic acid sequence or an expression cassette according to claims 1 or 3 and a pharmaceutically acceptable carrier therefore.

14. (Currently amended) A cell culture medium comprising a mutant serum albumin, a nucleic acid sequence or an expression cassette according to claims 1, 3 or ~~[[11]]~~ 10.

15. (Canceled)

16. (Previously presented) A method of altering growth characteristics of cells in cell culture comprising the step of culturing cells in cell culture in the presence of a mutant serum albumin according to claims 1 or 3.

17. (Currently amended) A method of obtaining a mutant serum albumin which displays an altered metal binding affinity ~~and/or or other physiological characteristic(s)~~ one or more physiological characteristics with respect to a native albumin from which the mutant has been derived, comprising the steps of:

- a) providing a nucleic acid sequence encoding a nucleic albumin polypeptide;
- b) conducting a mutagenesis reaction on said nucleic acid in order to alter said nucleic acid whereby said altered nucleic acid sequence encodes a mutant albumin polypeptide comprising at least one mutation with respect to said native albumin;

c) expressing said mutant albumin polypeptide and detecting whether or not said mutant albumin displays an altered metal binding ~~and/or or other physiological characteristic(s)~~ one or more physiological characteristics.

18. (Previously presented) The method according to claim 17 wherein the mutant albumin comprises at least one mutation to residues X_1 – X_{11} as shown in Table 1.

19. (New) The mutant according to claim 1 wherein the mutant displays an altered metal binding affinity and one or more physiological characteristic with respect to native human serum albumin.

20. (New) The mutant according to claim 1 wherein said one or more physiological characteristics are a change in cell adhesion to a substrate, percentage viability of cell, and cell growth of cells in culture.

21. (New) A method of obtaining a mutant serum albumin which displays an altered metal binding affinity and one or more physiological characteristics with respect to a native albumin from which the mutant has been derived, comprising the steps of:

- a) providing a nucleic acid sequence encoding a nucleic albumin polypeptide;
- b) conducting a mutagenesis reaction on said nucleic acid in order to alter said nucleic acid whereby said altered nucleic acid sequence encodes a mutant albumin polypeptide comprising at least one mutation with respect to said native albumin;
- c) expressing said mutant albumin polypeptide and detecting whether or not said mutant albumin displays an altered metal binding and said one or more physiological characteristics.